R-87-05-0246.

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FOAM LAKE and AREA

ECONOMIC YIELD CLUB

THE 1987 CROP RESULTS

93-00944/

Acknowledgment

The Foam Lake and Area Economic Yield Club would like to take this opportunity to say Thank You to the following;

- Bob and Liz Hall, of R & E Bulk Sales Ltd. for their sponsorship and support in running this club.

- Lewis Reeve, Ag. Rep. of District #20 for this help with ideas, programs, and his support.

- Sask. Agricultural Development Fund for financial help on our 1987 Plots and summer student.

- June Royale for use of Weedeater on plots.

- Ernie & Betty Johnston for use of lawnmowers and posthole diggers on plots.

- Bob & Wendy Elylofson for hosting our 1987 Tour: Barbeque.

- Glen Helgason for his services as our 1987 summer student.

- All other person who have helped or contributed to the betterment of this club.

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PRESIDENT'S REPORT

First of all I would like to thank the government for the funding to hire this year's summer student; also for the recognition of our club and the joint project.

It is my hope that the member's efforts were better utilized this year, resulting in an improvement over our 1986 plots.

In the future it is my hope that the farming industry will return to better times; until then, it is club such as ours and the communication between its members that may help us survive and improve.

Lastly, I would like to congratulate and thank all the members for their continual contributions and support.

Yours truly,

Larry Haw
President.

SECRETARIES REPORT

Notes from 1987 Secretary Treasurer

I would first like to thank the members of the club for their support and help this last year, as well as Lewis Reeve and the Sask. Development Fund.

This was the first year we used a summer student to do the leg work for us and the results and recordkeeping were greatly improved. If we continue this concept of a summer student we can get even better results, if we utilize his efforts better by giving him better directions and asking for further results. Once again, we saw what a little water at the right time can do, as we went from East to West on our tour. In this type of club, we seem to benefit most from the tour in July.

It is my hope that the club will survive and grow as we gain new members and others return. The benefits are there for us if only we make use of them.

Thank you for your time and effort.

Sincerely

Dale Johnston
Secretary / Treasurer
F.L. and Area Economic Yield Club.

SUMMARY OF 1987 CLUB EVENTS

Our Spring Meeting was held in early April, with our banquet and awards for 1986 plots. The evening was well attended and quest speaker for the night was Ag Rep Lewis Reeves. After the banquet a short meeting was held in requard to our 1987 Plots.

Our next meeting was June 16th. We hired Glenn Helgason as our summer student in Agriculture. With the help of the Sask. Ag. Development Fund, a more intensive set of tests and targets were started.

July 11 was our summer tour which was most beneficial for us; we walked each plot and discussed the pros and cons of these with the responsible persons.

July 16 we went to the A.G. Canada Research Station in Saskatoon. Unfortunately, we were generally disappointed in their research, from our standpoint.

Glenn Helgason kept the records this year and organized the records, which made the results worth a lot. The club feels there should be even more input to recordkeeping in the future. It was also suggested that more than one tour of our own plots would be more beneficial.

Generally, the club did very well, given the weather and economic stress we found in 1987.

SUMMER STUDENT REPORT

I would like to take this time to thank all the members for their great co-operation and assistance they gave me in working with their plots. I would like to summarize the Foam Lake and District Economic Club as a group of superb farmers who are not only concerned with the labour aspect of farming but as well as the intensive management that goes along with farming. It is farmers like these that other farmers look up to so that they can learn also what is the right combination of inputs to get the maximum output. I feel that a program like this is essential, especially now when maximizing returns has become more and more important. The club and I have learnt a lot about what we want to achieve and how to do it this year and next year will have a better control and plot situation than this year.

Thank you.

Glenn Helgason

FOAM LAKE AND AREA ECONOMIC YIELD CLUB

LIST OF CURRENT '86 and '87 MEMBERS

President: Mr. Larry Haw
Box 281
Foam Lake, Sask.
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(272-3559)

Secretary/Treasurer: Mr. Dale Johnston
Box 336
Foam Lake, Sask.
S0A 1A0
(272-4502)

Royledale Stock Farm Ltd.
c/o Mr. Mitch Royle
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S0A 1A0
(272-4396)

Mr. John Cruickshank
Box 621
Foam Lake, Sask.
S0A 1A0
(272-4645)

Mr. John Tarnowetzki
Box 14
Tuffnell, Sask.
S0A 4G0
(272-3946)

Mr. Bob Eyolfson
Box 225
Leslie, Sask.
S0A 2E0
(272=4624)

T & B Agro Ltd.
c/o Keith Barber
Box 11
Leslie, Sask.
S0A 2E0
(272-3950)

(members; cont.)

Nordal Bros Farm's Ltd.
c/o Mr. Gunnar Nordal
Box 60
Leslie, Sask.
S0A 2E0
(272-4742)

Springer Bros.
c/o Merv & Ernie Springer
Leslie, Sask.
S0A 2E0
(272-4774)

INPUT PRICES

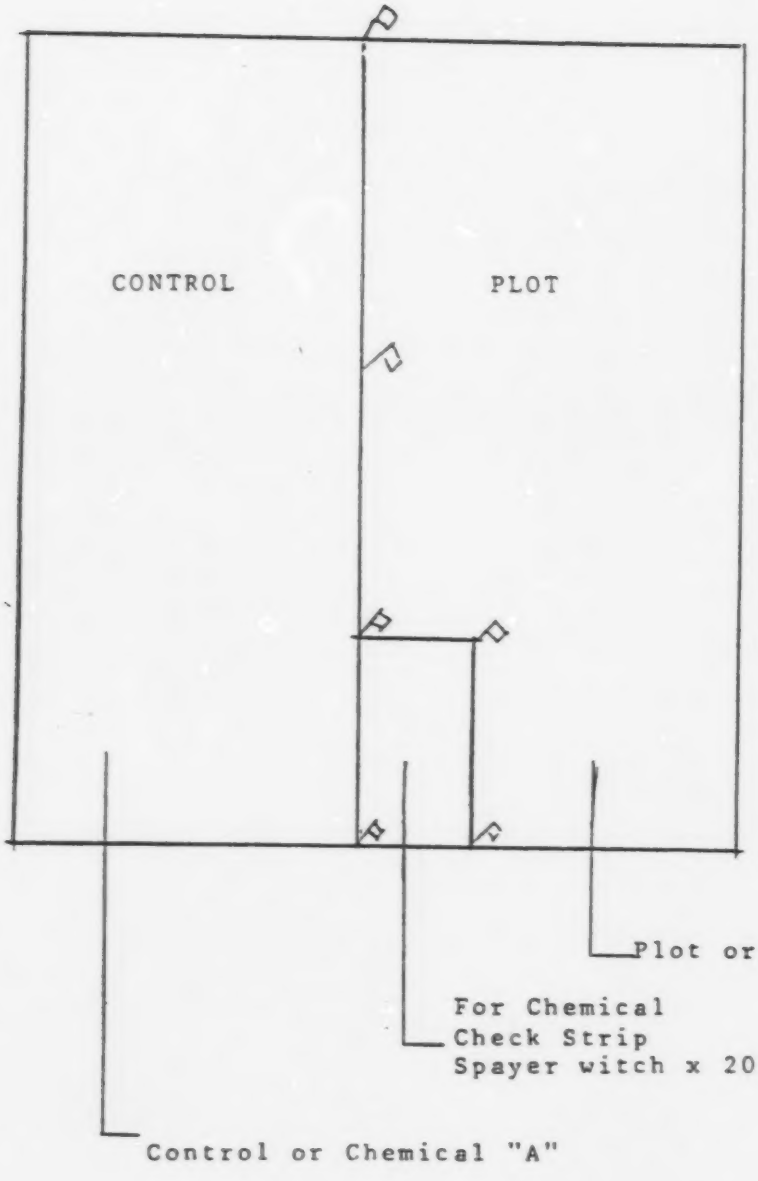
N - 22¢/lb
P - 32¢/lb
K - 10¢/lb
S - 14¢/lb
Mn - 3.50/acre
Zn - 3.50/acre
Fortress - $11.10/acre
Avenge - $11.10/acre
Treflan - $12.00/acre
Hoe Grass ; $13.50/acre

GRAIN PRICES

#1 fd barley - $1.31/bu
#1 fd malt - $2.29/bu
#2 hard red spring wheat - $2.83/bu
#3 amber durum - $2.45/bu
#1 Canola - $4.55/bu
#2 peas - $4.25/bu

****
PLOT JUMMARIES
****

PLOT LAYOUT


CONTROL
PLOT
Plot or Chemical "
For Chemical
Check Strip
Spayer witch x 200'
Control or Chemical "A"

[redacted]
c/o R & E Bulk Sales
Box 730
Foam Lake, Sask.
S0A 1A0

TISSUE TEST RESULTS

		Zinc	Copper	Magensi	Mangane	Total N	Calcium	Phospho	Potassi
		ppm	ppm	%	ppm	%	%	%	%
101	John Cruickshank Leduc Barley #1	22.0	11.0	0.62	59.0	3.25	1.55	0.16	2.81
102	John Cruickshank Leduc Barley #2	27.0	9.00	0.52	49.0	3.95	1.40	0.24	3.01
103	John Cruickshank Leduc Barley #3	26.0	8.00	0.48	53.0	3.91	1.50	0.22	3.33
104	John Cruickshank Leduc Barley #4	25.0	9.00	0.53	39.0	4.85	1.41	0.17	2.43
105	John Cruickshank Katepwa Wheat#5	21.0	7.00	0.56	69.0	4.72	0.92	0.34	2.26
106	John Cruickshank Katepwa Wheat#6	24.0	8.00	0.61	71.0	4.63	0.99	0.32	2.48
107	John Cruickshank Katepwa Wheat#7	24.0	7.00	0.53	93.0	3.89	1.16	0.43	2.77
108	John Cruickshank Katepwa Wheat#8	23.0	6.00	0.43	66.0	4.59	1.03	0.33	2.86
109	Larry Haw Harrington Barley #1	15.0	10.0	0.55	44.0	2.60	1.10	0.22	3.68
110	Larry Haw Harrington Barley #2	19.0	3.00	0.72	82.0	2.50	1.56	0.18	3.76
111	E & M Springer Westar Canola #1	35.0	6.00	0.65	51.0	2.53	1.50	0.44	4.36
112	E & M Springer Westar Canola #2	44.0	7.00	0.66	47.0	3.01	1.61	0.58	5.62
113	John Tannowetski Trapper Peas #1	21.0	11.0	0.30	28.0	3.63	1.49	0.20	2.17
114	John Tannowetski Trapper Peas #2	23.0	7.00	0.60	38.0	3.02	1.15	0.23	1.97
115	T & B Agro Bonanza Barley#1	15.0	9.00	0.71	55.0	4.12	1.65	0.17	2.65
116	Mitchel Royle Madora Durum #1	23.0	7.00	0.26	25.0	3.83	0.76	0.34	2.63
117	Mitchel Royle Madora Durum #2	19.0	8.00	0.29	29.0	4.75	0.77	0.20	2.85
118	Gunnar Nordal Bonanza Barley #1	12.0	8.00	0.60	46.0	3.51	0.89	0.12	4.18
119	Gunnar Nordal Bonanza Barley #2	21.0	12.0	0.37	25.0	4.01	0.94	0.21	3.94
120	Gunnar Nordal Bananza Barley #3	10.0	8.00	0.66	49.0	2.38	1.19	0.13	2.82
121	Bob Eyolfson Sceptor Durum #1	13.0	7.00	0.57	40.0	3.76	1.21	0.20	2.64
122	Bob Eyolfson Sceptor Durum #2	14.0	8.00	0.52	58.0	2.90	1.48	0.19	2.67

				Iron	Total S	B	Mo
				ppm	%	us/sm	us/sm
101	John Cruickshank	Leduc Barley	#1	152	0.540	17.0	3.40
102	John Cruickshank	Leduc Barley	#2	129	0.650	5.0	4.00
103	John Cruickshank	Leduc Barley	#3	139	0.550	6.0	3.60
104	John Cruickshank	Leduc Barley	#4	119	0.450	10.0	4.00
105	John Cruickshank	Katepwa Wheat	#5	123	0.490	7.0	4.00
106	John Cruickshank	Katepwa Wheat	#6	135	0.440	17.0	3.00
107	John Cruickshank	Katepwa Wheat	#7	175	0.490	12.0	4.00
108	John Cruickshank	Katepwa Wheat	#8	132	0.430	10.0	3.00
109	Larry Haw	Harrington Barley	#1	104	0.860	9.0	6.00
110	Larry Haw	Harrington Barley	#2	108	0.850	13.0	6.00
111	E & M Springer	Westar Canola	#1	86.0	1.02	33.0	2.60
112	E & M Springer	Westar Canola	#2	103	1.13	41.0	5.50
113	John Tannowetski	Trapper Peas	#1	190	0.210	16.0	4.00
114	John Tannowetski	Trapper Peas	#2	97.0	0.240	24.0	4.00
115	T & B Agro	Bonanza Barley	#1	119	0.470	10.0	4.00
116	Mitchel Royle	Madora Durum	#1	89.0	0.590	16.0	5.00
117	Mitchel Royle	Madora Durum	#2	130	0.530	11.0	7.00
118	Gunnar Nordal	Bonanza Barley	#1	121	0.410	17.0	5.20
119	Gunnar Nordal	Bonanza Barley	#2	88.0	0.570	6.0	7.90
120	Gunnar Nordal	Bonanza Barley	#3	87.0	0.520	10.0	7.00
121	Bob Eyolfson	Sceptor Durum	#1	100	0.440	10.0	3.70
122	Bob Eyolfson	Sceptor Durum	#2	134	0.490	10.0	3.80

				Total N %	Phospho %	Potassi %	Total S %	Magnesi %	Calcium %
123	Bob Eyolfson	Triton Canola	#3	4.05	0.73	4.36	1.22	1.00	2.08
124	Bob Eyolfson	Triton Canola	#4	3.36	0.79	4.51	1.37	0.85	3.44
125	Bob Eyolfson	Triton Canola	#5	3.73	0.68	4.51	1.15	0.83	2.90
126	Bob Eyolfson	Triton Canola	#6	4.06	0.66	3.63	0.990	0.73	2.42

				Zinc ppm	Copper ppm	Mangane ppm	Iron ppm	B us/sm	Mo us/sm
123	Bob Eyolfson	Triton Canola	#3	30.0	7.00	84.0	173	36.0	4.80
124	Bob Eyolfson	Triton Canola	#4	27.0	7.00	79.0	198	33.0	5.00
125	Bob Eyolfson	Triton Canola	#5	27.0	7.00	71.0	140	34.0	5.00
126	Bob Eyolfson	Triton Canola	#6	27.0	6.00	60.0	139	30.0	4.00

Tentative

Plant Tissue Analysis
Interpretive Criteria

CROP Peas/Beans
PLANT PART/GROWTH STAGE Fully Developed Leaves at Flowering

Nutrient	Low	Marginal	Sufficient	High	Excess
Nitrogren (N)%	2.5	2.5 - 3.0	3.0 - 5.5	5.5 - 7.0	7.0
Phosphorus (P)%	0.15	0.15- 0.25	0.25- 0.50	0.50- 0.8	0.8
Potassium (K)%	1.2	1.2 - 1.5	1.5 - 3.0	3.0 - 5.0	5.0
Sulphur (S)%	0.15	0.15-0.20	0.20-0.4	0.4 - 0.8	0.8
Calcium (CA)%	0.15	0.15-0.35	0.35 - 2.0	2.0 - 3.0	3.0
Magnesium (MG) %	0.1	0.1 - 0.20	0.20 - 1.5	1.5 - 3.0	3.0
Zinc (ZN)ppm	10	10 - 15	15 - 70	70 - 150	150
Copper (CU) ppm	2	2 - 5	5 - 20	20 - 50	50
Iron (FE) ppm	15	15 - 20	20 - 250	250 - 500	500
Manganese (MN) ppm	10	10 - 20	20 - 100	100 - 250	250
Boron (B) ppm	3.0	3.0 - 5	5 - 25	25 - 75	75
Molybdenum (MO)ppm			.2 - 20		

Tentative

PLANT TISSUE ANALYSIS
INTERPRETIVE CRITERIA

Crop Canada Rapeseed

Plant Part/Growth Stage Entire plant at flowering (Small plants)
(for Larger plants use first fully mature lea

Nutrient	Low	Marginal	Sufficient	High	Excess
Nitrogen (N)%	2.0	2.0 - 2.5	2.5 - 4.0	4.0 - 5.0	5.0
Phosphorus (P)%	0.15	0.15- 0.25	0.25- 0.5	0.5 - 0.8	0.8
Potassium (K)%	1.2	1.2 - 1.5	1.5 - 2.5	2.5 - 4.0	4.0
Sulphur (S)%	0.20	0.20-0.25	0.25- 0.50	0.50-1.0	1.0
Calcium (Ca)%	0.4	0.4 - 0.5	0.5 - 4.0	4.0	
Magnesium (Mg)%	0.1	0.1 - 0.2	0.2 - 1.5	1.5	
Zinc (Zn) ppm	12	12 - 15	15 - 70	70 - 150	150
Copper (Cu) ppm	1.7	1.7 - 2.7	2.7 - 20	20 - 75	75
Iron (Fe) ppm	15	15 - 20	20 - 200	200 - 500	500
Manganese (Mn) ppm	10	10 - 15	15 - 100	100 - 250	250
Boron (B) ppm	20	20 - 30	30 - 80	80 - 100	100
Molybdenum (Mo) ppm					

Tentative

Plant Tissue Analysis
Interpretive Criteria

CROP Cereal (Wheat Barley)

Plant Part/Growth Stage Whole plant prior to filling

NUTRIENT		LOW	MARGINAL	SUFFICIENT	HIGH	EXCESS
Nitrogen (N) %	Spring	1.5	1.5 - 2.0	2.0 - 3.0	3.0 - 4.0	4.0
	Winter	1.25	1.25 - 1.75	1.75 - 3.0	3.0 - 4.0	4.0
Phosphorus (P) %		0.15	0.15 - 0.25	0.26 - 0.5	0.5 - 0.8	0.8
Potassium (K) %		1.0	1.0 - 1.5	1.5 - 3.0	3.0 - 5.0	5.0
Sulphur (S) %		0.1	0.1 - 0.15	0.15 - 0.40	0.40 -0.8	0.8
Calcium (Ca) %	Other	0.10	0.10- 0.2	0.2 - 1.0	1.0 - 1.5	1.5
	Barley	0.2	0.2 - 0.3	0.3 - 2.0	2.0 - 2.5	2.5
Magnesium (Mg) %		0.1	0.1- 0.15	0.15 - 0.50	0.5- 1.0	1.0
Zinc (Zn) ppm		10	10 - 15	15 - 70	70 - 150	150
Copper (Cu) ppm	Barley	2.3	2.3 - 3.7	3.7 - 25	25 - 50	50
	Wheat	3.0	3.0 - 4.5	4.5 - 25	25 - 50	50
	Oats	1.7	1.7 - 2.5	2.5 - 25	25 - 50	50
Iron (Fe) ppm		15	15 - 20	20 - 250	250 - 500	500
Manganese (Mn) ppm		10	10 - 15	15 - 100	100 - 250	250
Boron (B) ppm		3	3 - 5	5 - 25	25 - 75	75
Molybdenum (Mo) ppm		.01	.01 - .02	.03 - 5	5 - 10	10

T & B AGRO

Plot Purpose: to determine the economic returns of applying average and fortress on bonanza barley.

Land Location: NW 18 31 12 W2

Crop: Bonanza Barley

Date Seeded: May 1

Seed Source: Certified

Seeding Implement: air seeder

Pre-seeding Herbicide: Plot 1 -- fortress (Oct 20,1986)
-- Buctril M
Plot 2 -- Avenge (June 6, 1987)
-- Buctril M
Control -- Buctril M

This barley was seeded on continuous wheat for the past three years. Prior to that, it was summerfallowed.

FERTILIZER	N	P	K	S
Plot 1	64	35	10	10
Plot 2	64	35	10	10
Control	64	35	10	10

Tissue Tests

	Zn (ppm)	Cu (ppm)	Magesi (%)	Mangane (ppm)	Total N (%)	Calcium (%)
Plot 1	15.0	9.00	0.71	55.0	4.12	1.65

	Phospho (%)	Potassi (%)	Iron (ppm)	Total S (%)	B ug/gm	No ug/gm
Plot 1	0.17	2.65	119	0.47	10.0	4.0

Tissue Analysis Interpretations

	N	P	K	S	Ca	Mg	Zn
Plot 1	excess	marginal	sufficient	high	sufficient	high	sufficient

	Cu	Fe	Mn	B	Mo
Plot 1	sufficient	sufficient	sufficient	sufficient	sufficient

Yield Data

Control ---- 38.06 bu/acre

Plot 1 ---- 46.4 bu/acre

Plot 2 ---- 38.06 bu/acre

Observations

Germination was even. Spring frost and lack of moisture decrease yield potiential. The fortress applied plot had delayed germination by a couple of days. The fortress had good control on wild oats and millet. The average gave poor wild oat control. The three plots ripened at the same time. The total rainfall was 8.7" and the grade is either 1 feed barley or malt.

Economic Benefits

Inputs

Plot 1 Fortress @ $11.10/acre

Plot 2 Average @ $11.00/acre

Returns

1 Feed Barley

Control 38.06 bu/acre x $1.31/bu = $49.86/acre
Plot 1 46.4 bu/acre x $1.31/bu = $60.78/acre
Plot 2 38.06 bu/acre x $1.31/bu - $49.86/acre

1 fd malt

Control	38.06 bu/acre	x $2.29/bu	= $87.16/acre
Plot 1	46.4 bu/acre	x $2.29/bu	= $106.26/acre
Plot 2	38.06 bu/acre	x $2.29/bu	= $87.16/acre

Dockage 1/2% Plot 1 1 1/2% Plot 2 2% Control

Summary

If the barley grades 1 fd, the control with no chemicals applied will have about the same return as the fortress plot. This return is $49.86/acre. The average plot only gives a return of $49.68/acre. If the barley grades malt, the fortress plot will be the most economically beneficial, yielding $95.16/acre. The control yielded $87.16/bu and the average plot $76.10/acre. Overall the fortress plot will be the most beneficial because it controlled the wild oats and millet, while the control didn't and therefore they went to seed and will cause potential problems in the following years. The average and control barley samples had wild oats in them, so there will be more dockage on the fortress plot.

Mitchell Royle

Plot Purpose: To see if there is any economic benefit by applying fortress and deep banded fertilizer on herrington barley.

Land Location:

Crop: Herrington Barley

Date Seeded: May 4

Seed Source:

Preseeding Herbicide: Plot -- Fortress
Control -- none

Post Seeding Herbicide: McPak & Banvel

Seeding Implement: Air seeder

The barley was seeded on lentil stubble. Fortress and fertilizer were applied in fall 1986.

Fertilizer:	N	P	K	S
Plot	50	33	-	-
Control	-	-	-	-

Tissue Tests: ---None

Yield Data:	Dockage
Plot -----61 bu/acre	1%
Control --39 bu/acre	1%

Observations

Germination was even. Spring frost decreased yield potential and crop healthiness. The plot had a heathier and thicker canopy. On June 8, a square yard test was done to see the growth per square yard of millet. The control plot had 430 plants/square yard while the plot had 140 plants per square yard. The number of plants in the plot decreased as the growing season continued. Both the plot and the plot ripened at the same time. There was good wild oat control in the plot. The total rainfall was 8.9 inches. The grade may be malt of #1 feed barley.

ECONOMIC BENEFIT

Input Costs

Fertilizer	----$20.56/ acre
Fortress	----$11.10/ acre
Total	$31.66/ acre

Returns

1 fd Malt

Plot	61 bu/acre	x $2.29/bu	= $139.69/acre
Control	39 bu/acre	x $2.29/bu	= $89.31 / acre

1 fd barley

Plot	61 bu/acre	x $1.31/bu	= $79.91/acre
Control	39 bu/acre	x $1.31/bu	= $51.09/acre

Summary

The fortress side required 2 - 3 extra days to emerge in spring but remained clean of millet and wild oats all year. This Plot had a very big advantage to the pre-energence side.

BOB ELYFSON

Plot Purpose: To determine the economic returns of varying fertilizer rates on Triton Canola.

Land Location: NW 21 31 13 W2

Crop: Canola

Date Seeded: April 26

Seed Source: Certified

Pre-seeding Herbicide: Treflan (fall liquid applied)

Post-seeding herbicide: Blades
post (patch applied)

The crop was seeded on 9th crop with durum being grown last year. In the fall the land was worked with a tandem disc, cultivated twice and chisel plowed once. In the spring the land was banded with shovels, seeded and harrow packed.

FERTILIZER	N	P	K	S
Plot 1 *	70	20	10	10
Plot 2	140	40	20	20
Plot 3	210	60	30	30
Plot 4	140	40	20	20
Control	70	20	10	10

*Canola stubble - the fertilizer was spring applied

Tissue Tests	Zn(ppm)	Cu(ppm)	Magnese (%)	Mangane (ppm)	Total N (%)	Calcium (%)	Phospho (%)
Control	27.0	6.00	0.73	60.0	4.06	2.42	0.66
Plot 2	30.0	7.00	1.00	84.0	4.05	2.08	0.73
Plot 3	27.0	7.00	0.85	79.0	3.36	3.44	0.79
Plot 4	27.0	7.00	0.83	71.0	3.73	2.90	0.68

	Potassi (%)	Iron (ppm)	Total S (%)	B (ug/gm)	Mo (ug/gm)
Control	3.63	139	0.99	30.0	4.0
Plot 2	4.36	173	1.22	36.0	4.8
Plot 3	4.51	198	1.37	33.0	5.00
Plot 4	4.51	140	1.15	34.0	5.00

Tissue Analysis Interpretations

	N(%)	P(%)	K(%)	S(%)	Cu(%)	Mg(%)	Zn
Control	High	High	High	High	Sufficient	Sufficient	Sufficie
Plot 2	High	High	Excess	Excess	Sufficient	Sufficient	Sufficie
Plot 3	Sufficient	High	Excess	Excess	Sufficient	Sufficient	Sufficie
Plot 4	Sufficient	High	Excess,	Excess,	Sufficient	Sufficient	Sufficie

	Cu	Fe	Mn	B	Mo
Control	Sufficient	Sufficient	Sufficient	Sufficient	--
Plot 2	Sufficient	Sufficient	Sufficient	Sufficient	--
Plot 3	sufficient	sufficient	sufficient	sufficient	--
Plot 4	sufficient	sufficient	sufficient	sufficient	--

Yield Data:

Control --- 27.5 bu/acre
Plot 1 --- 18.75 bu/acre
Plot 2 --- 28.3 bu/acre
Plot 3 --- 33.4 bu/acre
Plot 4 --- 28.3 bu/acre

BOB EYLOFSON

Plot Purpose: To determine the economic returns of Sceptor durum platned on lentil stubble and canola stubble with 20 extra pounds of nitrogen per acres.

Land Location: SE 28 31 13 W2

Crop: Sceptor Durum

Dated Seeded: April 30

Seed Source: Registered

Seeding Implement: Air seeder

Post-Seeding herbicide: Banuel
MCPA-K
Moc 284 (patch applied)

In the fall the land was worked with a trandem disk, chisel plowed and banded. In the spring it was chisel plowed.

FERTILIZER	N	P
Plot 1 (canola stubble)	60	30
Plot 2 (lentil stubble)	40	30

Tissue Tests

	Zn (ppm)	Cu (ppm)	Magnesi (%)	Mangane (ppm)	Total N (%)	Calcium (%)	Phospho (%)
Plot 1	14.0	8.00	0.52	58.0	2.90	1.48	0.19
Plot 2	13.0	7.00	0.57	40.0	3.76	1.21	0.20

	Potassi (%)	Iron (ppm)	Total S (%)	B (ug/gm)	Mo (ug/gm)
Plot 1	2.67	134	0.49	10.0	3.7
Plot 2	2.64	100	0.44	10.0	3.7

Tissue Analysis Interpretations

	N	P	K	S	Cu	Mg	Zn
Plot 1	Sufficient	Marginal	Sufficient	High	High	High	Margina
Plot 2	High	Marginal	Sufficient	High	High	High	Margina

	Cu	Fe	Mn	B	Mo
Plot 1	Sufficient	Sufficient	Sufficient	Sufficient	Hig
Plot 2	Sufficient	Sufficient	Sufficient	Sufficient	Hig

Yield Date:

Plot 1 -- 31 bu/acre
Plot 2 -- 28.5 bu/acre

Observations

Germination was even. Spring frost decreased yield potential and crop healthiness. Moisture was unsufficient during early growing season. There were no noticable growth differences between the plots. There was a reasonably large millet growth but less millet on canola stubble. The total rainfall was 8.9" and the durum graded a #3 amber durum.

Economic Benefits

Inputs: Plot 1 -- $4.40/acre

Returns:

Plot 1 --- 31bu/acre x $2.45 = $15.95/acre
Plot 2 --- 28.5 bu/acre x $2.45 = $69.83/acre

Summary:

By applying 20 extra pds of N on canola stubble was the most economically benefical practice yielding a return of $75.95/acre. The durum on lentil stubble yeilded a return of $69.83/acre.

Observations:

There was unsufficient moisture for germination. The crop did not germinate until late May. The high fertilizer plot had a longer flowering period and a taller and thicker canopy. On the first plot where the canola was seeded on canola stubble contained blackleg. No infestations were in the crop. The bladex and post gave good weed control while the treflan gave fair to good weed control. There was 8.9" of rainfall and the canola grade #1.

Economic Benefits

Inputs:

Control	-- $24.20/acre
Plot 1	-- $24.20/acre
Plot 2	-- $48.40/acre
Plot 3	-- $72.60/acre
Plot 4	-- $48.20/acre

Returns:

Control	27.5 bu/acre	x $4.55/bu	= $125.13/acre
Plot 1	18.75 bu/acre	x $4.55/bu	= $85.31/acre
Plot 2	28.3 bu/acre	x $4.55/bu	= $128.77/acre
Plot 3	33.4 bu/acre	x $4.55/bu	= $151.97/acre
Plot 4	28.3 bu/acre	x $4.55/bu	= $128.77/acre

Summary:

The most economically beneficial return was from the conrol plot, making a return of $100.93/acre. The double and triple fertilizer ratis gave about the same returns of around $80.00 an acre. This is a $20.00 an acre loss by applying the extra rates of fertilizer. The canola planted on canola stubble was contaminated with black leg which caused an $39.82/acre loss.

JOHN CRUICKSHANK

Plot Purpose: Micro nutrient test on Luduc Barley and Katepwa Wheat.

Barley:

Land Location: SE 21 30 12 W2

Crop: Luduc

Date Seeded: May 12

Seed Source: Certified

Seeding Implement: Air Seeder

Post Seeding Herbicide:

The cropping history was 1985 summerfallow, and 1986 Luduc Barley. The land was worked twice with sprikes.

FERTILIZER	N	P	K	S	Mn[2]	Zn[1]
Plot 1	85	30	20	-	1 L/acre	-
Plot 2	85	30	20	-	1 L/acre	1 L/acre
Plot 3	85	30	20	-	-	1 L/acre
Control	85	30	20	-	-	-

1. Zn - 7% Zn with 4% S @$3.50/acre
2. Mn -5% Mn with 4% S @$3.50/acre

Tissue Tests

	Zinc (ppm)	Copper (ppm)	Magness (%)	Mangane (ppm)	Total N (%)	Calcium (%)	Phospho (%)
Plot 1 (Mn)	22.0	11.0	0.62	59.0	3.25	1.55	0.16
Plot 2(MnZn)	27.0	9.0	0.52	49.0	3.95	1.4	0.24
Control	26.0	8.00	0.48	53.0	3.91	1.5	0.22
Plot 3 (Zn)	25.0	9.00	0.53	39.0	4.85	1.41	0.17

	Potassi (%)	Iron (ppm)	Total S (%)	B (ug/gm)	Mo (ug/gm)
Plot 1 (Mn)	2.81	152	0.54	17.0	3.4
Plot 2 (MnZn)	3.01	129	0.65	5.0	4.00
Control	3.33	139	0.55	6.0	3.6
Plot 3 (Zn)	2.43	119	0.45	10.0	4.0

TISSUE ANALYSIS INTERPRETATION

	N (%)	P (%)	K (%)	S (%)	Ca (%)
Plot 1 (Mn)	High	Marginal	Sufficient	High	Sufficient
Plot 2 (MnZn)	High	Marginal	High	High	Sufficient
Control	High	Marginal	High	High	Sufficient
Plot 3 (Zn)	Excess	Marginal	Sufficient	High	Sufficient

	Zn	Cu	Fe	Mn	B
Plot 1 (Mn)	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient
Plot 2 (MnZn)	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient
Control	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient
Plot 3 (Zn)	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient

Yield Data:

Plot 1 (Mn)	68.5 bu/acre
Plot 2 (MnZn)	56.2 bu/acre
Control	66.7 bu/acre
Plot 3 (Zn)	75.7 bu/acre

Yield data taken by square yard test. Moisture content has been compensated for at 0%.

Oberservations:

Germination was even,spring front decreased yield and crop healthiness. No noticable differences between plots and control. Total rainfall 8.3". Grade - 1 feed. The Zn,Mn were sprayed on at a rate of 1 l./acre on June 17.

Economic Benefit:

Inputs: Mn ----$3.50 / acre
ZnMn --$7.00 / acre
Zn ----$3.50 / acre

Returns:

Plot 1 (Mn)	68.5 bu/acre	x $1.31/bu	= $89.74/acre
Plot 2 (ZnMn)	56.2 bu/acre	x $1.31/bu	= $73.62/acre
Plot 3 (Zn)	75.7 bu/acre	x $1.31/bu	= $99.17/acre
Control	66.7 bu/acre	x $1.31/bu	= $87.37/acre

Summary:

The Zn applied on the plot gave a return of $8.30/acre while the Mn gave a loss of $1.13/acre and the ZnMn combination produced a loss of $17.25/acre.

JOHN CRUICKSHANK

Wheat

Land Location: SE 21 30 12 W2
Crop: Katepwa
Date Seeded: May 12/87
Seed Source: Certified
Seeding Implement: Air seeder
Post Seeding Herbicide: Buctril M

The cropping history was 1985 summerfallow, and 1986 Luduc Barley. The land was worked twice with spikes.

FERTILIZER	N	P	K	S	Mn[2]	Zn[1]
Plot 1	85	30	20	-	1 L/acre	-
Plot 2	85	30	20	-	1 L/acre	1 L/acre
Plot 3	85	30	20	-	-	1 L/acre
Control	85	30	20	-	-	-

Zn -- 7% Zn with 4% S @ $3.50/acre
Mn -- 5% Mn with 4% S @ $3.50/acre

TISSUE TESTS

	Zn (ppm)	Cu (ppm)	Magnesi (%)	Mangane (ppm)	Total N (%)	Calcium (%)
Plot 1 (Mn)	21.0	7.00	0.56	69.0	4.72	0.92
Plot 2 (ZnMn)	24.0	8.00	0.61	71.0	4.63	0.99
Plot 3 (Zn)	23.0	6.0	0.43	66.0	4.59	1.03
Control	24.0	7.0	0.53	93.0	3.89	1.16

	Phospho (%)	Potassi (%)	Iron (ppm)	Total S (%)	B (ug/gm)	Mo (ug/gm)
Plot 1 (Mn)	0.34	2.26	123	0.49	7.0	4.0
Plot 2 (ZnMn)	0.32	2.48	135	0.44	17.0	3.0
Plot 3 (Zn)	0.33	2.86	132	0.43	10.0	3.0
Control	0.43	2.77	175	0.49	12.0	4.0

TISSUE ANALYSIS INTERPRETATION

	N (%)	P (%)	K (%)	S (%)	Ca (%)	Mg (%)
Plot 1 (Mn)	High	Sufficient	Sufficient	High	Sufficient	High
Plot 2 (ZnMn)	High	Sufficient	Sufficient	High	Sufficient	High
Plot 3 (Zn)	High	Sufficient	Sufficient	High	High	Sufficie
Control	High	Sufficient	Sufficient	High	High	High

	Zn	Cu	Fe	Mn	B	Mo
Plot 1 (Mn)	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficie
Plot 2 (ZnMn)	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficie
Plot 3 (Zn)	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficie
Control	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Sufficie

Yield Data:

Plot 1 (Mn)	37.5 bu/acre
Plot 2 (ZnMn)	27.3 bu/acre
Plot 3 (Zn)	31.1 bu/acre
Control	28.0 bu/acre

Yield date taken by square yard test. Moisture content has been compensated for at 40%.

Observations:

Germination was even. Spring frost decreased yield and crop healthiness. No noticeable difference between plots and control. Total rainfall 8.3". The Zn and Mn were sprayed on at a rate of 1 L/acre on June 17. Grade #2 Hard Red Spring.

Economic Benefit:

Inputs: Mn --- $3.50/acre
ZnMn--- $7.00/acre
Zn --- $3.50/acre

Returns:

Plot 1 (Mn)	35.5 bu/acre	x	$2.83/bu	= $100.47/acre
Plot 2 (ZnMn)	27.3 bu/acre	x	$2.83/bu	= $ 77.26/acre
Plot 3 (Zn)	31.7 bu/acre	x	$2.83/bu	= $ 88.01/acre
Control	28.0 bu/acre	x	$2.83/bu	= $ 79.24/acre

Summary:

The Mn applied on the wheat gave the highest return of $17.73/acre. The Zn gave a return of $5.27/acre and by applying the MaZn yielded a loss of $8.98/acre.

TISSUE TEST INTERPRETATIONS

	N (%)	P (%)	K (%)	S (%)	Cu (%)	Mg (%)
Plot	Sufficient	Marginal	Sufficient	Sufficient	Sufficient	Suffici
Control	Sufficient	Marginal	Sufficient	Sufficient	Sufficient	Suffici

	Zn	Cu	Fe	Mn	B	Mo
Plot	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Suffici
Control	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	Suffici

Yield Data:

Plot 2150 lbs @ .767 acres = $\frac{2803.13 \text{ lbs}}{65 \text{ lbs/bu}}$ = 43.13 bu/acre

Control 1990 lbs @ .767 acres = $\frac{2594.5 \text{ lbs.}}{65 \text{ lbs/bu}}$ = 39.92 bu/acre

Observations:

Germination was fairly good and even. Frost did not affect crop growth substantually because of presence of some moisture. Heavier canopy on plot and also flowered longer. Much fewer nodules on roots of plants in plot. Us control. Spray worked good but did not control bad growth of wild buckwheat. Total rainfall 9.4". Grade #2.

Economic Benefit:

Input: Plot --- $5.50/acre

Returns:

Plot --- 43.13 bu/acre x $4.25/bu = $183.3/acre

Control- 39.92 bu/acre x $4.25/bu - $169.66/acre

JOHN TARROWETSKI

Plot Purpose: Nitrogen test on field peas to see if there is an economic benefit.

Land Location: NW 21 30 10 W2

This land has had wheat on it for the previous three years. This spring it was worked twice. Nitrogen applied on April 26 as anhydrous. Rest applied with seed.

Crop: Trapper Peas

Date Seeded: April 28

Seed Source: Certified (enoculated)

Post Seeding Herbicide: Post with Na salt

Seeding Implement: hoe-press drill

FERTILIZER

	N	P	K	S
Plot	38.5	20	10	10
Control	13.5	20	10	10

Tissue Tests

	Zn (ppm)	Cu (ppm)	Magnesi (%)	Mangane (%)	Total N (%)	Ca (%)
Plot	21.0	11.0	0.30	28.0	3.63	1.49
Control	23.0	7.00	0.60	38.0	3.02	1.15

	Phospho (%)	Potassi (%)	Iron (ppm)	Total S (%)	Blug (gm)	Mo (ug/gm)
Plot	0.20	2.17	190	0.21	16.0	4.00
Control	0.23	1.97	97.0	0.24	24.0	4.00

SUMMARY:

By applying the extra 25 lbs. of N. yielded an extra return of $8.14/acre. The eccacyalite level tested 1.5. (2 is the max for seed.)

GUNNAR NORDAL

Plot Purpose: N fertilizer test on fall and spring banding.
Land Location: NW 26 30 13 W2
Crop: Barley
Date Seeded: May 4
Seed Source: Certified
Seeding Implement: Air seeder
Post Seeding Herbicide: MCPA - June 4
Hoegrass 284 - spot sprayed.

This land has been continuously cropped for the last 12 years. The last two years it has grown wheat. Cultivated twice last fall with 2" spikes.

FERTILIZER:

	N	P	K	S
Plot 1 (1)	65	35	5	10
Plot 2 (2)	32	17	2.5	5
Plot 3 (3)	65	35	5	10

1. Applied by deep bander in fall 1986.
2 & 3. Applied by deep bander in spring 1987.

Tissue Tests

	Zn (ppm)	Cu (ppm)	Magnesi (%)	Mangane (ppm)	Total N (%)	Ca (%)	P (%)
Plot 1	12.0	8.00	0.60	46.0	3.51	0.89	0.12
Plot 2	21.0	12.0	0.37	25.0	4.01	0.94	0.21
Plot 3	10.0	8.00	0.66	49.0	2.38	1.19	0.13

	K (%)	Iron (ppm)	Total S (%)	B (ug/gm)	Mo (ug/gm)
Plot 1	4.18	121	0.41	17.0	5.2
Plot 2	3.94	88.0	0.57	6.0	7.9
Plot 3	2.82	87.0	0.52	10.0	7.00

Tissue Analysis Interpretation

	N (%)	P (%)	K (%)	S (%)	Ca (%)	Mg (%)
Plot 1	High	Marginal	High	High	Sufficient	High
Plot 2	High	Sufficient	High	High	Sufficient	Sufficinet
Plot 3	Sufficient	Marginal	Sufficient	High	Sufficient	High

	Zn (ppm)	Cu (ppm)	Fe (ppm)	Mu (ppm)	B (ppm)	Mo (ppm)
Plot 1	Marginal	Sufficient	Sufficient	Sufficient	Sufficient	High
Plot 2	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	High
Plot 3	Marginal	Sufficient	Sufficient	Sufficient	Sufficient	High

Yield Data:

Plot 1 57.3 bu/acre
Plot 2 4.2 bu/acre
Plot 3 47.6 bu/acre

Observations:

Germination was even. Spring frost decrease yield and crop healthiness. Fall fertilized plot had greener and thicker canopy. Even maturity throughout field. Total rain fall 8.85". Grade -

Economic Benefits:

Input Costs:

	$/acre
Plot 1	$27.40
Plot 2	$13.70
Plot 3	$27.40

Returns:

1 fd Malt

Plot 1	57.3 bu/acre	x	$2.29/bu	= $131.21/acre
Plot 2	42.0 bu/acre	x	$2.29/bu	= $ 96.18/acre
Plot 3	47.6 bu/acre	x	$2.29/bu	= $109.00/acre

1 fd Barley

Plot 1	57.3 bu/acre	x	$1.31/bu	= $ 75.10/acre
Plot 2	42.0 bu/acre	x	$1.31/bu	= $ 55.02/acre
Plot 3	47.6 bu/acre	x	$1.31/bu	= $ 62.36/acre

Summary

If the barley is sold for malt, the fall banded full quanity applied fertilizer made $21.33/ acre over the spring 1/2 banded and $21.81/acre over the spring full quantity applied fertilizer.

If the barley is sold as 1 feed, the fall full quantity applied fertilizer made $6.38/acre over the spring 1/2 banded. and $12.74/acre over the spring full quantity applied fertilizer. The fall banded show a remarkable increase in yield over the spring banded. Reasons for this may include not enough time for fertilizer to dissolve in spring banded fertilizer and/or excessive moisture loss due to deep spring operation.

DALE JOHNSTON

Plot Purpose: To determine maximum economic profit in either barley, pea - barley mix or pea crops.

Land Location: NW 30 31 12 W2

	Plot 1	Plot 2	Plot 3
Crop:	Harrington Barley	Harring - Trapper	Trapper Peas
Date Seeded:	May 17	May 17	May 17
Seed Source;	Commercial		Certified
Post Seeding Herbicide:	Hoe 284 & MCPA	Hoe 284 & MCPA	Post
Seeding Implements:	Air Seeder	Air Seeder	Air Seeder

The land was preworked twice with 16" sweeps. The crops grown were on continuous cropped wheat. The nitrogen was applied as anhydrous on April 15. Rest applied with seed.

Fertilizer

	N	P	K	S
Plot 1	60	20	8	2
Plot 2	60			
Plot 3	60	25	10	3

Tissue Tests -- NIL Due to drought

Yield Data:

Plot 1 -- 35.6 bu/acre

Plot 2 -- 2953.36 lbs. (70% bly -- 30%peas = 39.9 bu/acre & 17.2 bu/acre peas

Plot 3 -- 1879 lbs. --- 31.3 bu/acre peas.

Observations:

Germination was slow because of lack of moisture. Barley germinatated about two days earlier than peas. Frost affect both barley and peas substantually because lack of moisture. Barley - pea mix helped reduce weed infestation. Crop was on the whole severly reduced due to lack of moisture. Crops evened evenly, except for second growth in barley. No harvest problems. Disadvantages of mix crop was high cost of inputs and cleaning costs. Rainfall - 8.4". Unfortunatly it came to late for crop.

Economic Benefit

Barley 35.6 bu/acre x 1.31 1fd = **$46.64/acre**

Malt 35.6 bu/acre x $2.29 = **$81.52/acre**

Barley/Pea Mix

	Barley		Peas		Total
1 FD	$52.30	+	$68.80	=	$121.10
Malt	$91.37	+	$68.80	=	$160.17

Peas $125.20/acre

Summary:

The pea/barley mix was the most economically beneficial by $34.97 an acre if barley goes malt over the peas and $78.65 dollars an acre over malt barley alone. If the barley does not go malt, the pea crop is the most economically beneficial by $4.10 an acre over the mix crop and $78.56 over the straight barley. One must consider the extra costs involved in growing the pea and pea/barley mix.

The extra costs include cleaning costs, weed control and input costs. The pea/barley mix had even ripening and there were no combine problems.

LARRY HAW

Plot Purpose: Nitrogen Test on summerfallow barley.

Land Location: NE 14 30 10 W2

Crop: Harrington Barley

Date Seeded: May 3

Seed Source:

Pre-seeding Herbicide: Fortress (10 lbs./ acre)

Seeding Implement: Double Press Drill

Prior to seeding, land was worked with anyhdrous applicator on April 29.

Fertilizer

	N	P	K	S
Plot	57	32	-	-
Control	7	32	-	-

Tissue Tests

	Zn (ppm)	Cu (ppm)	Mangnesi (%)	Mangane (ppm)	Total N (%)	Calcium (%)
Plot	15.0	10.0	0.55	44.0	2.60	1.10
Control	19.0	3.0	0.72	82.0	2.50	1.56

	Phospho (%)	Potassi (%)	Iron (ppm)	Total S (%)	B (ug/gm)	Mo (ug/gm)
Plot	0.22	3.68	104	0.86	9.0	6.00
Control	0.18	3.76	108	0.85	13.0	6.00

Tissue Analysis Interpretation

	N(%)	P(%)	K(%)	S(%)	Ca(%)	Mg(%)	Zn(ppm)
Plot	Sufficient	Marginal	High	Excess	High	High	Sufficient
Control	Sufficient	Marginal	High	Excess	Excess	High	Sufficient

	Cu (ppm)	Fe (ppm)	Mn (ppm)	B (ppm)	Mo (ppm)
Plot	Sufficient	Sufficient	Sufficient	Sufficient	High
Control	Marginal	Sufficient	Sufficient	Sufficient	High

Yield Data:

Plot -----74 bu/acre

Control-----55 bu/acre

Observations:

Good germination. Frost did not affect crop substantially because of presence of moisture after and before frost. Fortress control was good. Plot with extra nitrogen was thicker, larger, head lengths and healthier looking crop compared to control. Total rainfall - 10 7/10". Grade 1 fd and possibly malt.

Economic Benefit - Yes

Malt Control --- 55 bu/acre x $2.29/bu = $125.95/acre

Plot --- 74 bu/acre x $2.29/bu = $169.46/acre

Extra returns --- $43.51/acre

1 ft Control --- 55 bu/acre x $1.31/bu = $72.05/acre

Plot --- 74 bu/acre x $1.31/bu = $96.94/acre

Extra returns --- $24.89/acre

Extra costs: $11.00/acre

Summary:

There was a $13.89/acre return by applying an additonal 50 lbs of nitrogen on summerfallow Harrington if the crop grades at 1 feed. There is a $32.51/acre return on this plot if the barley grades 1 feed malt.

SPRINGER BROS.

Plot Purpose: Sulphur test on summerfallow - Westar Canola

Land Location: SE 24 31 13 W2

Crop: Westar Canola

Date Seeded: May 19

Seed Source: Certified

Pre-seeding Herbicide: Liquid Rival

Seeding Implement: Hoe Drill

Prior to seeding, the land was worked twice, May 11 rodweeded and May 15 Banded.

FERTILIZER:	N	P	K	S
Plot	50	0	0	12
Control	50	0	0	0

Tissue Tests

	Zinc (ppm)	Cu (ppm)	Mangnesi (%)	Total N (%)	Ca (%)	Phosphoi (%)
Plot	35.0	6.00	0.65	2.90	1.48	0.19
Control	35.0	6.00	0.65	2.53	1.50	0.44

	Potassi (%)	Iron (ppm)	Total S (%)	B (ug/gm)	Mo (ug/gm)	Mangane (ppm)
Plot	2.67	103	1.13	41.0	5.50	58.0
Control	4.36	86.0	1.02	33.0	2.60	51.0

Tissue Analysis Interpretations

	N (%)	P (%)	K (%)	S (%)	Ca (%)	Mg (%)
Plot	Sufficient	Marginal	High	Excess	Sufficient	Sufficie
Control	Sufficient	Sufficient	Excess	Excess	Sufficient	Sufficie

Tissue Analysis Interpretations

	Zn	Cu	Fc	Mn	B	Mo
Plot	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	-
Control	Sufficient	Sufficient	Sufficient	Sufficient	Sufficient	-

Yield Data:

Plot --------39 bu/acre

Control -------38 bu/acre

Observations:

Lack of post seeding moisture delayed germaination. When moisture was present there was fairly even germination. No large differences between plot and control in germination, or flowering length but plot seemed to have a bit larger leaves. Chemical control was good. Total rainfall 8.7". Grade #1.

Economic Benefit -- Yes

$2.38/acre Extra sulphur on Plot
-- extra yield x $/bu - $/acre
1 bu/acre x $4.55/bu = $4.55/acre

Summary:

There was a $2.17 return per acre by applying 12 pounds per acre of sulphur on summerfallow canola. It may also be noted that the extra sulphur may have a residual effect for next years crop and therefore there may be a larger economic benefit than just $2.17/acre.